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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,381	03/06/2002	Minoru Usui	Q68776	2803
7590	11/05/2003		EXAMINER	
Sughrue Mion 2100 Pennsylvania Avenue NW Washington, DC 20037-3213			VO, ANH T N	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
10/070,381

Applicant(s)  
USUI

Examiner  
Anh T. N. Vo

Art Unit  
2861



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7 6) ☐ Other:

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## **FINAL REJECTION**

### ***Response to Applicant's Amendment***

The rejections under 35 U.S.C. 112, second paragraph, and over Tsuzuki et al reference(US 4,992,596) are withdrawn in view of the amendments to the claims.

### ***Claims Rejections***

#### ***Claim Rejections - 35 U.S.C. § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3/1, 4/1, 5/1, 6 and 8/6, 9, 10-11 and 12 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kikuchi et al (US 6,394,137) in view of Wachi (US 6,220,690)..

Kikuchi discloses in Figures 1-12 a valve device comprising:

- a membrane (1) having its periphery thick portion supported by a valve seat (4) and a thin portion having an ink passing port (3) in a center; and

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- an elastic member (6).

However, Kikuchi et al do not disclose the angled portion that is concentric with respect to the ink passage port formed in the central region of the thin portion and the angled portion is selected from the group consisting of a "V" shape and a "U" shape .

Nevertheless, Wachi teaches in Figures 4A-4B and 5A-5B a printing device comprising a diaphragm member (4312) having an angled portion formed at a central region of the thin portion for allowing the diaphragm (4312) to stretch out without breaking.

It would have been obvious to a person having skill in the art at the time the invention was made to incorporate the teaching of the angled portion taught by Wachi into the valve device of Kikuchi et al for the purpose of allowing the membrane to stretch out without breaking.

Note that, a skilled artisan recognizes that the angled portion of Wachi can be configured in "V" shape or "U" shape to allow the membrane being folded that would increase the ink pressure. Thus, selecting the shape of the angled portion is considered to be a mechanical design expedient for an engineer. It would have been obvious to a person having skill in the art to select the "V" shape or the "U" shape for the angled portion of the modified membrane of Kikuchi for the purpose of accomodating with the size of the valve.

Claims 2, 3/2, 4/2, 5/2, 7/2 and 8/7 and 13 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kikuchi et al (US 6,394,137) in view of Yamada (US 4,817,503).

Kikuchi et al discloses in Figures 1-12 a valve device comprising:

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- a membrane (1) having its periphery thick portion supported by a valve seat (4) and a thin portion having an ink passing port (3) in a center; and
- an elastic portion (6).

However, Kikuchi et al do not disclose the plural protruding rib portion radially extending from ink passing port.

Yamada teaches in Figure 2 a diaphragm pump comprising ribs (16) radially extending from the center for supporting the diaphragm (membrane) to increase the resistance to the pressure, column 2, lines 18-30.

It would have been obvious to a person having skill in the art at the time the invention was made to incorporate the teaching of the ribs in the Yamada reference into the valve device of Kikuchi et al for the purpose of supporting the membrane to increase the resistance to the pressure.

***Response to Applicant's Arguments***

The applicant argues that combining Wachi reference with the Kikuchi reference is in hindsight. The argument is not persuasive because it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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The applicant argues that the structures of Kikuchi reference and Wachi references are completely difference and the element (12) of Tsuzuki is the arms, not ribs. The arguments are not persuasive. Although the structures of Kikuchi et al and Wachi are difference but they are analogous art. Thus, employing the suggestion of Wachi to modify the device of Kikuchi et al would have been obvious to a person having skill in the art. Also, employing the ribs for supporting the membrane is suggested in the Yamada reference as discussed above.

#### ***CONCLUSION***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo. whose telephone number is (703) 305-8194. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 4:00 P.M. The fax number of this Group 2861 is (703) 305-3431 or 305-3432.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'An H T N Vo', with a stylized, flowing script.

**AN H T N. VO**  
**PRIMARY EXAMINER**

November 1, 2003